

What is claimed is:

1. A system for enabling queries to a database to be processed comprising:
  - an application system for providing queries to a database system including the database, the database system coupled to the application system via a first connection;
  - a storage system coupled to each of the application system and the database system; and
  - a return path selector coupled to the database system for selecting a return path over which to return results from queries made to the database system, the return path selector selecting from among at least the first connection or the storage system.
2. A system as in claim 1 further comprising a request path selector coupled to the application system for selecting a request path over which to send query data for requests made to the database system, the request path selector selecting from among at least the first connection or the storage system.
3. A system as in claim 1 wherein the storage system is coupled to each of the application system and the database system using a switch.
4. A system as in claim 3 wherein a database hub system is used to couple the application system and the database system.
5. A system as in claim 1 wherein the results from the query have a size, and the return path selector chooses a return path based on the size of the results.
6. A system as in claim 5 wherein the return path selector chooses a return path based on a prediction of the size of the results.
7. A system as in claim 1 wherein the return path selector chooses a return path based on a measurement of throughput of the first connection.
8. A system as in claim 1 wherein when the return path is chosen to be the storage system, the results are sent to the storage system as a file and an address in the storage system for the file is provided to the application system using the first connection.

9. A system as in claim 1 wherein after the results are used by the application system, the application system designates the results as used, thereby enabling them to be erased from the storage system at a later time.

10. A system as in claim 1 wherein after the query data is used by the database system, the database system reuses the query data for a further query.

11. A system as in claim 8 wherein the file has associated therewith a key and the key is used to control access to the results.

12. A system as in claim 11 wherein the file also has associated therewith a flag to indicate status of the file.

13. A system as in claim 12 wherein the flag indicates at least one of whether the file is being written, is ready to be read, is being read, and is available to be deleted.

14. A system as in claim 10 wherein after the query data is used by the database system, the database system designates the query data as used, thereby enabling them to be erased from the storage system at a later time

15. A system as in claim 1 wherein the storage system is coupled to each of the application system and the database system using a switch.

16. A system as in claim 1 wherein the database includes a hub system for system coupled to each of the application system and the database system.

17. A system for enabling queries to a database to be processed comprising:

an application system for providing queries to a database system coupled to the application system via a first connection;

a storage system coupled to each of the application system and the database system; and

a request path selector coupled to the application system for selecting a request path over which to send query data for requests made to the database system, the request path selector selecting from among at least the first connection or the storage system.

18. A system as in claim 17 wherein the storage system is coupled to each of the application system and the database system using a switch.

19. A system as in claim 18 wherein a database hub system is used to couple the application system and the database system.

20. A system as in claim 17 wherein the query data have a size, and the request path selector chooses a request path based on the size of the query data.

21. A system as in claim 1 wherein when the request path is chosen to be the storage system, the query data are sent to the storage system as a file and an address in the storage system for the file is provided to the database system using the first connection.

22. A system as in claim 17 wherein the file has associated therewith a key and the key is used to control access to the results.

23. A system as in claim 17 wherein the file also has associated therewith a flag to indicate status of the file.

24. A system as in claim 17 wherein the flag indicates at least one of whether the file is being written, is ready to be read, is being read, and is available to be deleted.

25. A system as in claim 17 further comprising a return path selector coupled to the database system for selecting a return path over which to return results from queries made to the database system, the return path selector selecting from among at least the first connection or the storage system.

26. A system as in claim 25 wherein the results from the query have a size, and the return path selector chooses a return path based on the size of the results.

27. A system as in claim 1 wherein when the return path is chosen to be the storage system, the results are sent to the storage system as a file and an address in the storage system for the file is provided to the application system using the first connection.

28. A system for enabling queries to a database to be processed comprising:

an application system for providing queries to a database system coupled to the application system via a first connection, the application system including a database access system, and the database system including a gateway system;

a storage system coupled to each of the application system and the database system, and;

the gateway system including a return path selector for selecting a return path over which to return results from queries made to the database system, the return path selector selecting from among at least the first connection or the storage system.

29. A system as in claim 28 wherein the gateway system includes a return path selector for selecting a return path over which to return results from queries made to the database system, the return path selector selecting from among at least the first connection or the storage system.

30. A system for enabling queries to a database to be processed comprising:

an application system for providing queries to a database system coupled to the application system via a first connection, the application system including a database access system, and the database system including a gateway system;

a storage system coupled to each of the application system and the database system, and;

the database access system including a request path selector for selecting a request path over which to send data for queries made to the database system, the request path selector selecting from among at least the first connection or the storage system.

31. A system for enabling queries to a database to be processed comprising:

an application system for providing queries to a database system including the database, the database system coupled to the application system via a communications network connection; and

a switch coupled to each of the database system and the application system.

a storage system coupled to the switch; and

a return path selector coupled to the database system for selecting a return path over which to return results from queries made to the database system, the return path

selector selecting from among at least the communications network connection and the switch;

32. A system as in claim 31 further comprising a request path selector coupled to the application system for selecting a request path over which to send query data for requests made to the database system, the request path selector selecting from among at least the communications network connection or the switch.

33. In a system having a query provider which provides queries to a database system connected to it by a first connection, the query provider and the database system being coupled a storage system, a method of returning results to the query provider comprising storing the results in the storage system at an address, and sending the address of the results over the first connection to the query provider.

34. A method as in claim 33 further comprising:  
generating a key for the results to identify their location; and  
sending the key over the network to the query provider.

35. A method as in claim 34 further comprising a step of, at the query provider, retrieving the results from the storage system.

36. A method as in claim 34 further comprising encrypting at least one of the key and the results.

37. A method as in claim 33 wherein the query provider provides query data to the database by storing the query data in the storage system at a location and sending information about the location over the first connection to the database system.

38. A method as in claim 28 further comprising, at the database system, the steps of:  
retrieving the query data from the storage system; and  
using the query data to obtain the results.

39. A method as in claim 33 further comprising providing a flag associated with the results to indicate whether the results are ready to be read by the query provider.

40. A method as in claim 37 further comprising providing a flag associated with the results to indicate whether the results have been read by the query provider.

41. In a data storage system connected to an application system and a database system via a network, a method comprising:

receiving from the database system over the network, results of execution of queries, the queries being sent to the database system by the application system;

storing the results in a storage area that the database system and the application system can access; and

sending, in response to a request from the application system, the results to the application system over the network.

42. In a system having an application system, a database system connected to the application system via a first connection and a data storage system connected to the application system via a second connection, a method, comprising the steps of:

sending a query from the application system to the database system by using the first connection; and

obtaining at the application system, a result of execution of the query from the storage system via the second connection.

43. The method of claim 42, wherein the first connection is a Local Area Network, and wherein the second connection is a Storage Area Network.